WE CLAIM:

1. A light emitting unit, comprising:

a light source for emitting a beam of output light; and

a refractive optical unit disposed in the beam of output light, the refractive optical unit comprising

a first lens formed of inorganic material and having a refracting surface that produces spherical aberration, the first lens being disposed so as to reduce the divergence of the beam of output light from the light source, and

a second lens formed of plastic and disposed in the beam of output light, the second lens having a refractive characteristic that substantially compensates spherical aberration introduced by the first lens.

2. A unit as recited in claim 1, wherein the light source is a laser.

3. A unit as recited in claim 2, wherein the laser is a semiconductor laser.

4. A unit as recited in claim 1, wherein the inorganic material is glass.

5. A unit as recited in claim 1, wherein the first lens is disposed at a distance from the light source so that the beam of output light is substantially collimated after passing through the first lens.

6. A unit as recited in claim 1, wherein the first lens is a ball lens.

7. A unit as recited in claim 1, wherein the first lens is a half ball lens.

8. A unit as recited in claim 1, wherein the second lens has an aspheric refracting surface.

9. A unit as recited in claim 8, wherein the aspheric refracting surface is non-rotationally symmetric about an optical axis of the refractive optical unit.

10. A unit as recited in claim 1, wherein the second lens is a molded plastic lens.

11. A unit as recited in claim 1, further comprising a third lens, the third lens disposed in the light beam to focus light that has passed through the first and second lens from the light source.

12. A unit as recited in claim 11, wherein the second lens has a refractive characteristic that substantially compensates spherical aberration introduced by the first lens and by the third lens.

13. A unit as recited in claim 1, wherein the second lens comprises a first surface shaped to correct for spherical aberration arising in the first lens, and a second surface shaped to focus the beam of output light.

14. A unit as recited in claim 13, wherein the first surface has a refractive characteristic that substantially compensates spherical aberration introduced by the first lens and by the second surface of the second lens.

15. A unit as recited in claim 1, wherein the second lens comprises a first surface, the first surface being shaped to correct for spherical aberration arising in the first lens and to focus the spherical aberration-corrected light.

16. A unit as recited in claim 1, wherein the second lens is a meniscus lens.

17. A unit as recited in claim 16, wherein the meniscus lens is attached to the refracting surface of the first lens.

18. A unit as recited in claim 1, wherein the second lens is attached to the refracting surface of the first lens.

19. A unit as recited in claim 1, further comprising a controller unit connected to the light source.

20. A unit as recited in claim 1, wherein the light source is disposed within a housing having a window, the first lens being attached to the window.

21. A unit as recited in claim 1, wherein the output light has a divergence of less than 10 milliradians after passing through the first lens from the light source.

22. A unit as recited in claim 1, wherein the output light has a divergence of less than 5 milliradians after passing through the first lens from the light source.

23. A unit as recited in claim 1, wherein the first lens comprises a plurality of first lenses disposed to reduce the divergence of the beam of output light from the light source.

24. A unit as recited in claim 23, wherein the plurality of first lenses comprises at least one lens disposed to reduce divergence of the output beam light in a first propagation plane and at least one lens disposed to reduce divergence of the output beam of light in a second propagation plane orthogonal to the first propagation plane.

25. A unit as recited in claim 24, wherein the second lens comprises a refractive correcting surface that corrects spherical aberration introduced by the at least one lens disposed to reduce divergence of the output beam light in the first propagation plane and by the at least one lens disposed to reduce divergence of the output beam of light in the second propagation plane.

26. A unit as recited in claim 24, wherein the second lens comprises a plurality of second lenses, one of the second lenses correcting spherical aberration introduced by the at least one lens disposed to reduce divergence of the output beam light in the first propagation plane and another of the second lenses correcting spherical aberration introduced by the at least one lens disposed to reduce divergence of the output beam of light in the second propagation plane.

27. A unit as recited in claim 26, wherein the second lenses are attached to their respective first lenses.

28. A lens assembly for managing light, the assembly comprising:

a first lens formed of an inorganic material and having a spherical refracting surface, the first lens being disposed on a optical axis of the assembly; and

a second lens formed of plastic and disposed on the optical axis, the second lens having a refractive characteristic that substantially compensates spherical aberration introduced by the first lens.

29. An assembly as recited in claim 28, wherein the first lens is a ball lens.

30. An assembly as recited in claim 28, wherein the first lens is a half ball lens.

31. An assembly as recited in claim 28, wherein the second lens has an aspheric refracting surface.

32. An assembly unit as recited in claim 31, wherein the aspheric refracting surface is non-rotationally symmetric about an optical axis of the assembly.

33. An assembly as recited in claim 28, wherein the second lens is a molded plastic lens.

34. An assembly as recited in claim 28, further comprising a third lens, the third lens disposed to focus light that has been collimated by the first and second lenses.

35. An assembly as recited in claim 34, wherein the second lens comprises a first surface shaped to correct for spherical aberration arising in the first lens, and a second surface shaped to focus spherical aberration-corrected light received from the first surface.

36. A laser unit as recited in claim 28, wherein the second lens comprises a first surface shaped to correct for spherical aberration arising in the first lens and shaped to focus spherical aberration-corrected light received from the first surface.

37. An assembly as recited in claim 28, wherein the second lens is a meniscus lens.

38. An assembly as recited in claim 37, wherein the meniscus lens is attached to the spherical refracting surface of the first lens.

39. An assembly as recited in claim 28, wherein the second lens is attached to the spherical refracting surface of the first lens.

40. An assembly as recited in claim 28, wherein the first lens comprises at least a hemisphere of glass and the second lens is a meniscus lens attached to the spherical refracting surface of the first lens.

41. A unit as recited in claim 28, wherein the first lens comprises a plurality of first lenses.

42. A unit as recited in claim 41, wherein the plurality of first lenses comprises at least one lens disposed to reduce divergence of light in a first propagation plane and at least one lens disposed to reduce divergence of light in a second propagation plane orthogonal to the first propagation plane.

43. A unit as recited in claim 42, wherein the second lens comprises a refractive correcting surface that corrects spherical aberration introduced by the at least one lens disposed to reduce divergence of light in the first propagation plane and by the at least one lens disposed to reduce divergence of light in the second propagation plane.

44. A unit as recited in claim 42, wherein the second lens comprises a plurality of second lenses, one of the second lenses correcting spherical aberration introduced by the at least one lens disposed to reduce divergence of light in the first propagation plane and another of the second lenses correcting spherical aberration introduced by the at least one lens disposed to reduce divergence of light in the second propagation plane.

45. A unit as recited in claim 44, wherein the second lenses are attached to their respective first lenses.